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Rev. 07/10/02

Illinois Environmental Protection Agency · P. O. Box 19276, Springfield, IL 62794-9276

MEMORANDUM

DATE: May 3, 1991

TO: Division File

FROM: Shirley Baer

SUBJECT: Meeting at University of Illinois, College of Medicine: Study proposed by University of Illinois at the Taracorp/NL Industries.

Refer to: L1190400007 -- Madison County
Taracorp/NL Industries/Technical Reports

During a April 15, 1991 phone conversation, IEPA was invited by Dr. William Buck, University of Illinois/College of Veterinary, to a meeting to be held between the PRPs, University of Illinois, and the Illinois Dept. of Public Health. It was our understanding that a U.S. EPA contractor, Renate Kimbrough, would be present. Our participation was to be limited to listening to discussions (IEPA was not to part of any decisions on the proposed work). Written confirmation of the scheduled meeting was telecopied on April 16, 1991 (Attachment A).

The day before the meeting, Steve Siegel (U.S. EPA Assistant Regional Counsel assigned to NL Industries/Taracorp Case) called Terry Ayers around 4:50 p.m. to express his anger and disappointment over the scheduled University of Illinois meeting. It appears that an attorney representing the PRPs-generators (Joseph Nassif/Coburn, Croft & Putzell for AT & T) informed Mr. Siegel of the meeting. A telecopy of a U.S. EPA letter was sent to our Agency (Attachment B). The letter addressed to Mr. Nassif (dated March 29, 1991) which detailed the negotiations between the ROD (signed March 30, 1990) and the Unilateral Administrative Order (dated November 27, 1990), as well as settlement discussions held after the August 31, 1991 good faith offer deadline. The telecopy also contained the U.S. EPA's policy on rototilling as an unacceptable methodology for remediating lead - contaminated soils.

At the April 18, 1991 meeting, the following people attended the meeting at the University of Illinois/College of Veterinary Medicine:

1.	Dr. William Buck	University of Illinois/Vet-Medicine	217/333-2053
2.	Terry Ayers	Illinois EPA	217/782-6760
3.	Shirley Baer	Illinois EPA	217/782-6760
4.	Judy McCarthy	AT & T, Technical Representative	908/204-8297
5.	Joseph Nassif	Coburn, Croft, & Putzell, (Outside Counsel for AT & T)	314/621-8575
6.	Alan M. Schesinger	AT &T	908/204-8430
7.	Karen Willcock	Environ	703/516-2312
8.	J.D. Smith	NL Industries, Counsel	212/421-7204
9.	Dennis Reis	Sidley & Austin	312/85302659
10.	David Schaeffer	University of Illinois/Vet-Medicine	217/244-0154
11.	John J. Hassert	University of Illinois/Agronomy-Soils	217/333-9472

12. Marie Cote'	University of Illinois/Vet-Medicine	217/333-2053
13. Phillippe Berny	University of Illinois/Vet-Medicine (Post-DOC/France)	217/333-2053
14. Joe DiPietro	University of Illinois/Vet-Medicine	217/333-6759
15. Terry Rathgeber	University of Illinois/Vet-Medicine	217/333-6759
16. Connie Sullinger	Illinois EPA	217/785-0830
17. Catherine Copley	Illinois Dept. of Public Health (IDPH)	217/782-5830
18. Steve Siegel	U.S. EPA (Asst. Regional Counsel)	312/353-1129
19. Ted Valli	University of Illinois/Vet-Medicine	
20. Tom Long	Illinois Dept. of Public Health (IDPH)	217/782-5830
21. Renate Kimbrough	Institute for Evaluating Health Risk (IEHR)	

A sign-up sheet was circulated and an agenda was handed out (see Attachment C).

I. Introduction/Dr. William Buck

The purpose of the meeting was to discuss the possible research studies that could involve University of Illinois expertise in epidermology and analytical procedures. University of Illinois is interested in collaborating with the health studies to be conducted by the Illinois Dept. of Public Health (IDPH) and sponsored by the Agency for Toxic Substances; Disease Registry (ATSDR).

II. Introductory Statement from PRP/Dennis Reis, Johnson Controls

There are issues that need to be addressed by the health study in regards to the smeltering operation. The health concerns associated with the Taracorp Site was initiated in 1979 after Taracorp, St.Louis Steel Recyclers, and IEPA signed a consent agreement to control lead air emissions.

Since AT & T sent lead to be recycled at the Taracorp facility, U.S. EPA has identified them as a PRP.

During negotiations, the PRPs requested a health study on areas near and away from the smeltering operations.

To date the PRPS have argued with the U.S. EPA in regards to the lead clean-up level. The PRPs would like to have a comprehensive health study to examine the effect of lead exposure. To date, a blood-lead study has been approved. The PRPs feel more extensive studies may be needed.

III. Open Discussion

Dr. Buck (U OF I): Dr. Schaeffer and Dr. Buck got involved in this project 2 years ago when Tom Long (IDPH) requested their visit to Granite City.

Dr. Buck interest in lead poisoning is with animals in particular with mining operations and lead smeltering activities in Texas, Iowa, Missouri, and Illinois.

Currently, the proposed remedial action is to excavate the top 6" (§55 sq. ft. soil) to achieve a 500 ppm clean-up objective.

At this point, there are 5 areas of research studies that should be investigated:

1. The 500 ppm clean-up level is not based on science. This number was determined by the center for Disease Control (CDC) using a different situation. The level for 1000 ppm should be met; however the levels between 500 and 1000 ppm is still not scientifically determined.

2. Other methods to soil remediation should be examined. Alternatives for the remediation of soils have not been considered. In particular, the phosphate/lime treatment of lead contaminated soil.

3. A series of studies to examine all sources of lead contamination (soil, other, etc.) in regards to human health risks. University of Illinois suggest a cat/dog investigation as a preliminary indicator of lead problems in the home.

4. Body Burden of Lead using X-ray fluorescence method (as used in New York). This work would be an ancillary study to the ATSDR work.

5. The recycling/reuse of lead from the waste pile (which is 307. Lead). Possibility of setting up a regional plant to take care of the problem should be examined.

Tom Long (IDPH): Currently a health study is being conducted between the State of Illinois, State of Missouri, and State of Kansas in association with IEPA and U.S. EPA. The work approved by ATSDR is for:

1. Body Burden of Lead & Cadmium* involving
   a. Blood/Lead
   b. Urinary/Lead and Cadmium

   *Cd is not a problem in Illinois

2. Specific protocols will be developed for this study

3. Health/Exposure Study

Terry Ayers (IEPA): IEPA concurred on the ROD for lead clean-up at 500 ppm (residential) and 1000 ppm (on-site). These levels could be reexamined to see if these levels are justification. However IEPA has their main/thrust in a need for action. IEPA is a bias toward clean-up rather then a reach study which could delay remedial action. The RI/FS took a long time to characterize the area. IEPA would object to the health study if it would interfere with the clean-up.

The RA is set for 1992.

The ROD was signed on March 30, 1990. There was enough information gathered so a decision was made for clean-up.

Dr. Kimbrough (IEHR): The health exposure study may suffer if RA takes place at the same time when the soil is being disturbed (air-borne lead).

U.S.EPA feels that enough information has been gathered and the clean-up levels have been established. U.S.EPA will not delay clean-up actions for extremenous matters.

Dr. Kimbrough (IEHR): Disturbing the soil will increase the lead exposure and therefore the study cannot be performed in accordance with Kansas and Missouri studies.

Dr. Buck (U OF I): Can the RA be delayed so the health study can be finished? Are court delays during the RA still possible?

Tom Long (IDPH): Although more basic research is required, the rototilling study (as proposed by the PRPs) can be done in Granite City or at test plots.

At this time, we don't know the exposure pathways. We know the effects of lead, but not the contribution effect from the pathways. CDC got the 500 ppm as a lead problem contribution.

Should do the body burden study after clean-up.

Short term exposure vs Long-term exposure after the clean-up (air-borne pollutants).

John Hassert (U of I): In 1979, U of I, Colorado State, and U of Missouri conducted a study in lead uptake in plants resulted from auto emissions. From this study, there were 4 variables which regulate lead uptake in plants:

1. Amount of lead in soil
2. Cation exchange capacity in soil
3. pH of soil*
4. PO_4 fertility of soil*

*These factors can ppt the lead in the soil so it is unavailable to plants.

It was determined that plants die at 500 ppm in sandy soils. For the Granite City area, 500 ppm is more than adequate for the soil.

It has been shown that there is very little lead uptake in grain when compared to root & leafy crops.

In Granite City, the lead is in the form of lead oxide and lead sulfide.

Possible to use EDTA as an acid extractant.

CROPS ---- SOILS ----CROP RESPONSE
(Type) (Type)

Need to examine house dust and soil w/phosphate-lime. The effect of lead-contaminated soil is dependent on metabolism of individuals.

Jim Simpson (CDC) has performed lead studies.

Dennis Reis (Johnson Controls): Growing grass on soiled (pH 8) is an important part of establishing the cover.

Lead does not migrate vertically down unless incorporated into the root (this is usually in the top soil).

PRPs are suggesting 10 plots with homogenous tilling lying within the test area with: (1) control plots; (2) no tillage but surface treated with lime/PO_4; (3) tillage (4) tillage with lime/PO_4.

Exposure to humans: Need baseline to determine effectiveness. Will be conducting the lead uptake study using carrots/lettuce plants.

Need to differentiate between lead on plant surface and the lead in the plant.

The ppm fails to consider the molecular wt of lead (209 g/mole). ppm is on a w/w basis.

The anticipated residential population to be studied by the health study in Illinois, Missouri and Kansas is 8,000. The actual population to be sampled will be based on a census to be carried by the IDPH. (The 1990 census data is not available). It is estimated that 1,000 individuals will be tested (with the majority of the population being from Illinois). Probably 800 households in the contaminated area will be sampled, with 200 households for control.

(Note on April 18, 1991 on KMOX morning show, Brad Bradley (U.S.EPA RPM) was interviewed on the air in regards to lead study).

The objective of the meeting was to gather interest from participants on:

*What is being done in industry in regards to the site.
*What activities are proposed to be done?
*Cooperative/Ancillary studies.

University of Illinois feels that there is not enough information to be gathered on the ATSDR-IDPH human exposure study. what questions will be on the census and what strata of the population is to be investigated?

Tom Long (IDPH): The census will be distributed to residential areas defined by the U.S.EPA (i.e. areas greater than 500ppm lead). The census is still being developed, but will include questions on the number and types of pets, number in household, ages (targeted: 0-6 and child-bearing age women). Census will be conducted door-to-door on weekends and evenings. Other possible questions are possible (e.g., how long they have lived in the area). It was suggested that the questions be simple and straight-forward with no socio-economic questions. The census will be reviewed by Marie Cote, ATSDR,

etc. Residents may be reinterviewed for QA/QC purposes. Currently, Marie Cote is interviewing for census takers. IDPH personnel will also participate in the census. IDPH is aiming for 100% participation. IDPH will probably be working outside the area identified in the ROD because IDPH felt that sampling in Venice was deficient.

The census is important for determining the population make-up and ultimately define the sample size/type for the three cities. Statistically, could sample one city, but politically this is not feasible. It was suggested that sampling should be limited to a smaller population to obtain a good environmental sample.

After the census, individuals will have their blood tested for lead, their urine tested for cadmium and lead, their liver/kidney tested and their blood pressure tested. Protocols are still being formulated since the census information will be decisive in the design. IDPH plans to test as many individuals which volunteer to participate at the following soil lead concentrations: less than 500 ppm; 500-1,000 ppm;1,000 - 2,000 ppm; 2,000 - 5,000 ppm. Abnormal results (i.e., control greater than 500 ppm) will require resampling.

Lead at greater than 125 ppm is unacceptable if the source is paint. The % lead in paint can be determined by a XRF analyzer. If the lead greater than 25 ppm. the paint will have to be abated by the property owner.

Occupational exposure to the lead will also be examined as part of the ATSDR. Those areas which exhibit elevated blood lead levels in the population will require actions.

The study will examine lead exposure through hobbies (e.g., stain glass. ammunition, target shoot, lead sinkers, etc.)

Exposure labels have not been determined for the basis of home selection.

David Schaeffer (U of I): Statistical analysis is difficult when doing random sampling. Kreigar values are used to set up gradient population strata. At the moment there is no appropriate number for sampling, statistically speaking will try to correlate children data with environmental sample data.

XRF technology could be utilized as a screening tool; however it is not approved for purchase by ATSDR grant and the equipment is not available by rental. Wet chemistry will be utilized (on ä 40 environmental samples) to determine lead exposure levels. The important of getting enough data is so models can be built (e.g., training sets,building sets, objective sets).

The main objective required by ATSDR is for IDPH to complete a lead/cadmium "body burden" by exposure study.

University of Illinois feels a dog/cat study can be extrapolated to human exposure/environmental factors. Animals as pre-indicators for human exposure

may be good; but cats and dogs have different behavior lifestyle and therefore have different ways to be exposed (e.g., animals may wander into industrial areas with higher lead exposure).

(Note a 1983 lead poisoning of dogs incident was due to the corn-gluten meal being contaminated by a railroad car transporting lead.)

Census will include questions detailing the dog's behavior and habitat. Will manily target pets which are isolated in the home. There are numerous dog/lead studies showing that if the lead in dogs increased, so were the lead levels in the children. Need to study if house cats can be used as an indicator.

ATSDR study: "Animals as Senitels of Environmental Hazards".

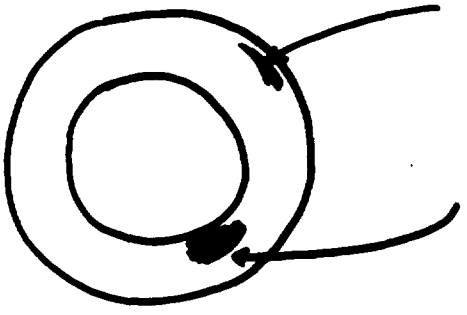
Can improve risk models over fish/rodents using mammalian systems.

Also if the lead levels are low in the household cats/dogs but high in the child, then the lead exposure is other than dust.

XRF (x-ray fluorescent) can be ancillary part of the health study. The data interpretation of the data could be difficult. It is an expensive technology - XRF is used to measure the lead body burden by measuring the lead deposition of lead in the bone core. The lead deposition in the bone is from long-term exposure. Zinc porphyrin can also be used to measure chronic lead exposure, but it does not indicate body burden. The difficulty in using XRF for this study is to determine the lead source and the dilution factor caused by growing children. (Smeltering operations ceased in 1983; so lead exposure from children less than 8 years will be primary from the soil - not the air).

Method =

x-ray activities the K or L shell line of lead which causes the lead to fluorescent. The x-ray exposure is 12-15 minutes on the crest of the tibia to obtain a ppm reading of lead (w/t) in the bone.



"L" Shell measures this area which is stable.

"K" shell exhibit more energy causing greater variation (note-penetrates deeper into the bone)

x-section of bone

Dr. Rosen (New York) has utilized this technique when examining a site in Pennsylvannia (similar to Taracorp).

St. Elizabeth Medical Center in Granite City is willing to assist in selecting individuals to do body burden (also conduct tests on cats and dogs).

Blood-lead measures are good for acute exposure, not chronic exposure.

Half-life of lead in blood is 40 days
Half-life of lead in tissue is 40 days
Half-life of lead in bone is 10,000 days (27 yrs.)

What is the correlation between body burden and health effect?

Lead in the bone can be demobilized during pregnancy and osteoporosis.

All children will have to be anesthesized for 12-15 minutes for the XRF work.

S-aminolevulinic acid dehydrase (ALAD) can be used in conjunction with the XPF to study the effects of lead on heme metabolism. The test will require 10-100ul of blood. The test will determine an individual's exposure to lead. The blood will have to be fresh. CDC has established a baseline for ALAD.

In addition, an immune test will be conducted on adults. Due to variability in children, the test will not be conducted on children younger than 10 years old.

The collection of teeth had been considered, but Dr. Kimbrough stated that lead deposit is different in the type of teeth. So to determine lead in teeth, you would have to collect the same tooth type(s).

A 48 hour urine study for EDTA challenge will be performed to correlation lead excretion in urine and body burden.

NL would like to review final protocols and provide their information on the site. Joe Nassif would also like to examine the proposals offer.

University of Illinois needs financial support from industry to conduct:

*animal study
*soil reclamations

Proposals for these studys have been submitted to Environ.

University of Illinois would still have some ancillary coordination with IDPH to help improve models from a technical aspect.

Steve Spiegel (USEPA):

USEPA notified PRP on May 18, 1990 of negotiations for good faith offers on RD/RA. A unilateral administrative order was issued following the rejection by U.S. EPA of unacceptable good faith offers. One of the offers was for tillage which USEPA rejected based on evaluating the sources/assurances presented by PRP.

University of Illinois approached industry for research grant.

Tom Long (IDPH): The series of events leading to this meeting.

Jim Janssen called Tom Long to let him know industries contacted IEPA two weeks ago about tillage	Tom Long said the tillage idea was a University of Illinois study	3 way conference call with PRP, Long, Janssen

University of Illinois: 2 months ago, U of Illinois contacted Dick Bicknell about doing lead research programs. 2 proposals were sent =

1. Dog/Cat Study
2. Soil reclamation/XRF

Bicknell was not interested, but their staff would be studying rototilling on 10' x 10' plots.

Yesterday (April 17, 1991), Mr. Spiegel notified Mr. Long that U of Illinois was named as a PRP-generator and therefore cannot be on he grant due to a conflict of interest. The University received a general notice letter in November 1989, and another notice in January 1990. Although the U if I facility is separate from the U of I administration, the appearances of conflict of interest is enough to disqualify U of I as a contractor for the ATSDR study.

U of Illinois lawyers to contact USEPA to see if "conflict of interest" issue can be resolved.

Note: NL knew of U of Illinois as a PRP since 1979.

SB:sad/1266q,85-93

U.S. ENVIRONMENTAL PROTECTION AGENCY RESPONSE TO GENERAL COMMENTS RECEIVED PURSUANT TO THE NOVEMBER 27, 1990, UNILATERAL ADMINISTRATIVE ORDER FOR THE NL INDUSTRIES/TARACORP SUPERFUND SITE IN GRANITE CITY, ILLINOIS - JANUARY 1991

On December 21, 1990, a conference was held in Chicago, as requested by various parties who received the November 27, 1990, administrative order for remedial design and remedial action at the NL Industries/Taracorp Site in Granite City, Illinois (the Order). The Order was issued under the authority of section 106 of the Comprehensive Environmental Response Compensation and Liability Act, as amended, 42 U.S.C. § 9601, et seq., (CERCLA). Each party who received the Order was entitled to a conference, as stated in paragraph 77 of the order. U.S. EPA agreed to accommodate each party who requested a telephone conference, individual meeting, or the collective meeting held on December 21.[1] The purpose of the December 21 conference was to

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[1] The only comment to reflect dissatisfaction with EPA's willingness to meet with the various parties was raised by Johnson Controls, as presented by Mr. Dennis Reis in his letter to Mr. Bradley of December 20, 1990. The source of the comment is somewhat curious, since Mr. Reis was consulted before the meeting to determine if December 21 was an acceptable date. Mr. Reis stated that December 21 was acceptable and requested a morning meeting. The meeting was held at 9:00 a.m. Johnson Controls is also the only party to complain about EPA's willingness to share information, particularly a technical guidance document on lead which Johnson Controls claims in its comments was "unreasonably" withheld. Johnson Controls, through an associate of Mr. Reis, made one verbal request for the information in question and stated there was no hurry for the material. EPA called the associate when there was a delay in sending the document to Johnson Controls and was again assured there was no hurry. The document in question was presented to the representatives of Johnson Controls one day before the representatives had delivered the comments claiming the document had been unreasonably withheld.

Received 7/18/91

discuss issues involving the implementation of the response actions required by the order, the extent to which Respondents intend to comply with the order, and the order's applicability to the Respondents. This letter serves as U.S. EPA's written response to the issues raised at the conference and the primary written comments received by U.S. EPA.

Several parties requested brief extensions of time to submit comments at the beginning of the meeting. U.S. EPA agreed to accept written comments until December 28, 1990, and agreed to delay the effective date of the order until January 18, 1991. The remainder of the meeting consisted of comments and/or discussion of the following points: (1) criticism by several generators who received the order that they were not provided with adequate notice of the public comment period; (2) criticism of U.S. EPA's selection of a remedy which requires the excavation and replacement of soils with concentrations equal to or greater than 500 ppm of lead; and (3) a discussion on whether tilling is an appropriate remedy at the NL Site.

Before discussion of the above points took place, government representatives asked the order recipients if they needed clarification on any provisions of the order or the scope of work attached to the order. No discussion was desired. Respondents were encouraged to raise all issues consistent with the purpose of the meeting, as defined in Section XXVI of the order. The order recipients were also asked at a later point in the meeting

whether any remedy or technology other than tilling requires discussion. No one raised additional issues for discussion.

U.S. EPA strongly believes the generators who received the order were provided with more than the required statutory period of time to comment on the selected remedy at the Site. Several of the major generators were initially made aware of the Site as far back as 1984 when they received an information request from U.S. EPA. A list of these generators is found in the Agreement and Administrative Order by Consent, U.S. EPA Docket No. V-W-85-C-006, section D, paragraph 8. This agreement required NL Industries, Inc. to perform the remedial investigation and feasibility study at the Site. The Site is also listed in the Federal Register as a National Priorities List Site. The identity of the remaining generators was unknown to U.S. EPA until October 1989. All parties identified as potentially responsible parties (PRPs) were sent notice letters in November 1989, and invited to a meeting to discuss the site in December 1989. The December meeting, among other things, provided a history of the site and discussed the remedial alternatives under consideration. Copies of technical documents were available for review and the representatives of Johnson Controls, who assumed chairmanship of the generator PRP committee, were provided with a copy of each technical document immediately upon verbal request. The December meeting also announced the anticipated schedule for future site events, including the January release of EPA's proposed plan and the opening of the public comment period. EPA

also announced its expectations that a final decision on the remedy for the site would be made in March 1990. Representatives of EPA answered all questions raised at the meeting before leaving the room to allow the PRPs to organize into a committee.

Events subsequent to the December 1989, meeting occurred in a manner consistent with how EPA informed the potentially responsible parties the events would occur. On January 10, 1990, EPA released its proposed plan and announced the beginning of a 45-day public comment period. The public comment period was then extended until March 12, 1990. Notice of a public hearing in Granite City, Illinois, on February 8, 1990, attracted approximately 250 people and newspaper, radio, and television coverage. In addition to the February 8, 1990 meeting, representatives of EPA held several availability sessions in the Granite City area and were available to all parties requesting the opportunity to discuss the proposed remedy with EPA. The above described efforts to obtain public comments go well beyond the minimum requirements of CERCLA.

The concerns raised at the December 21, 1990, meeting regarding the PRPs discontent with the remedy selected and a proposal to consider an alternate remedy (tilling) are not timely. The appropriate time for the PRPs to consider and comment on the various remediation techniques is during the preparation of the feasibility study and during the public comment period on EPA's proposed plan. Any comments questioning the remedy should have been raised during the public comment

period. U.S. EPA responded to the comments raised in a timely manner during the public comment period (See Appendix B of the Record of Decision [ROD] and the Responsiveness Summary to the comments received during the public comment period). The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) has specifically addressed the issue of comments submitted after a decision document has been signed. 40 C.F.R. § 300.825(c), "Record requirements after the decision document is signed", provides that:

> The lead agency is required to consider comments submitted by interested persons after the close of the public comment period only to the extent that the comments contain significant information not contained elsewhere in the administrative record file which could not have been submitted during the public comment period and which substantially support the need to significantly alter the response action. All such comments and any responses thereto shall be placed in the administrative record.

The comments received by NL Industries and Johnson Controls do not fulfill the requirements of 40 C.F.R. 300.825(c). Both parties had ample time to provide comments during the public comment period and have not submitted information which substantially supports the need to significantly alter the response action. Although EPA is not obligated to respond to comments challenging the Record of Decision (ROD) which are submitted outside of the public comment period and are not part of the Administrative Record for the selection of a remedy at the Site, the comments on the Order essentially challenging the ROD have been read and considered by EPA. The following is a summary

of EPA's analysis of the verbal and written comments submitted regarding EPA's selection of a remedy requiring the excavation of lead-contaminated soils of 500 ppm or greater in residential areas and the tilling remedy proposed as an alternative to excavation.

NL Industries' submittal consists primarily of a draft copy of a report from the "Lead in Soil" task force of the society for environmental geochemistry and health. EPA does not believe the report substantially supports a need to alter the response action and questions the advisability of relying on a draft version of this report.

NL Industries, in its letter of December 26, 1990, criticizes EPA for its use of modeling to support the 500 ppm cleanup level. EPA finds it curious that NL chooses to criticize the Agency for using the Integrated Uptake/Biokinetic Model (U/B Model) to support the ROD. EPA's use of the model was initially requested by NL in the comments submitted during the public comment period. A discussion of the results of EPA's initial application of the model in the version available at the signing of the ROD is found in Appendix B of the Record of Decision.

Johnson Controls submitted detailed comments challenging U.S. EPA's selection of a 500 parts per million (ppm) cleanup standard for areas which lead contaminated soil must be excavated and replaced with clean soil. The comments were prepared by a paid contractor, TRC. The comments, submitted pursuant to paragraph 79 of the order, follow comments prepared by TRC which

were submitted by Johnson Controls on August 31, 1990, which address the same topic. U.S. EPA, in a letter dated September 14, 1990, responded to Johnson Controls August 31, 1990 correspondence and discussed the misperceptions and inaccuracies of TRC's technical comments. The focus of EPA's response was a discussion of TRC's misuse of the U/B Model. The focus of the discussion below is the December, 1990, comments of Johnson Controls, as prepared by TRC. The following comments are not designed to be a point by point response to the comments of Johnson Controls, but summarize EPA's response and address some of the weaknesses in the Johnson Controls/TRC presentation.

U.S. EPA agrees with Johnson Controls that site specific factors are important in determining a proper remedy at the NL site. However, the comments do not recognize that there are many important factors that the Granite City site shares with other sites which involve the remediation of lead contaminated soil. Common factors should not be ignored, nor should the assessments of an appropriate remedy at other sites which must clean lead contaminated soils. U.S. EPA has reviewed the Marjol removal site in Throop, Pennsylvania and existing records of decisions at other Superfund sites faced with soil/lead cleanups. A review of these decisions indicates that Region V's selection of a 500 ppm cleanup standard represents the maximum acceptable level for lead in soil.

Among the factors which can be compared from site to site are the form of lead contamination and the population of people

who are or will be exposed to the contamination. It is generally accepted that lead contamination from lead smelter sites is more bioavailable than lead contamination from lead milling or mining sites and therefore poses a greater risk to the exposed human population. The bioavailability of smelter lead is higher than lead from mining sites because the smaller particle size and chemical form increase the degree of absorption in the human gut. While the NL site is a smelter site, the studies relied on by Johnson Controls are mining sites which will underestimate the risk of the lead to humans. A review of mining sites, however, indicates that EPA has determined that even these sites may warrant a 500 ppm cleanup standard for lead in residential soil. An example is found in reviewing the Sharon Steel Superfund site.

A second comparison of the various soil/lead sites involves a consideration of the population exposed to the lead which is related to their access to the contaminated material and frequency of exposure. It is generally agreed that children represent a sensitive subset of the population who are at greater risk to adverse health effects from exposure to lead. Generally, the risk at a site increases along a continuum, with an industrial site which will not become residential in the future posing less of a risk, a site which is not now but may become residential in the future posing a somewhat greater risk, and a site which includes urban residential areas posing the greatest risk. The NL site is in an urban residential area, the category which poses the greatest risk due to constant early exposure to

the population. EPA also notes that the type of community in an exposed area is significant. For example, a retirement village is less likely to have as many children (the critical subpopulation) exposed to the soil/lead contamination than a neighborhood with young children. Areas with bare areas of soil present a greater risk than areas where the soil is uniformly covered. EPA observations in the areas contaminated with lead reveal that bare patches of soil are not uncommon and that the areas in question are residential areas and neighborhoods with families, children, and parks. Again these observations place the NL site in a higher risk category than many other sites which are not residential. A review of cleanup decisions at these sites, however, reveals that even industrial areas have selected the 500 ppm cleanup standard and often a more stringent standard is established. Some sites have required cleanups down to background levels of lead, other sites have required a 200 ppm standard. The Marjol site choose a cleanup range between 200-300 ppm. All soils at this site which contain lead concentrations greater than 200-300 ppm require excavation and the replacement of the contaminated soil with clean soil. Again, this review of other sites indicates that the 500 ppm standard selected at the NL site is the maximum allowable concentration of lead in soil which may remain after excavation. Another factor considered by EPA which is characteristic of different sites is the increase in adverse health effects which would be expected due to the synergistic nature of metals in industrial areas (i.e. lead and

arsenic). The 500 ppm cleanup level was also the level independently arrived at by the State of Illinois and required for State concurrence on the Record of Decision.

TRC, in its critique of the cleanup level established by EPA, suggests that the basis of support for the cleanup level is the reports of Milar and Mushak (1982), Mielke, et al. (1988) and Shellshear (1975). They ignore the literature summaries and recommendations presented in (1) U.S. EPA OSWER Directive #9355.44-02, 1989; (2) USDHHS, Preventing Lead Poisoning in Young Children, 1985; and (3) Ontario Lead in Soils Committee, Review and Recommendations on a Lead in Soil Guideline, 1987 (OLSC), as well recommendations of other health agencies across the country including the Minnesota Pollution Control Agency and the Minnesota Department of Health, the California Department of Health Services, etc. A need for a lower cleanup level has also been echoed by individual researchers in the lead field, both in publications and personal communications, including Barltrop (1975), Yappee (1983), Bornschein (personal Communication), as well as those cited. Thus the basis for the 500 ppm soil lead cleanup level for children exposed daily in a residential setting can hardly be considered casual.

TRC attempts to discredit the Milar and Mushak (1982) study because it relates blood lead levels to house dust levels rather than to soil lead levels. In fact, they state that "the house dust level/blood lead level described ..... has very little relevance to the blood lead response to soil lead." Blood lead

studies give evidence of the importance of the contribution of outdoor soil/dust lead to blood lead levels in older children (ages 2-6) and outdoor soil/dust lead to indoor dust lead loading and blood lead levels in younger children (under age 2). The relationship between soil lead and house dust lead has been examined in great detail, as the consultants themselves attest to later in the discussion in section 2.1.4. However, in this section, they maintain that "the most important sources of dust lead appear to be unrelated to soil lead". This would suggest that homes without lead paint should have low dust lead levels. Analysis of homes at Superfund sites and in the Cincinnati Tri-City Study (remediated homes with no lead paint) have been used to derive factors for outdoor soil loading to indoor dust. Dr. Robert Elias of the U.S. EPA Office of Research and Development (ORD) has provided information on this relationship and has examined existing data at length to develop indoor dust loading factors for the updates of the Lead Uptake/Biokinetic Model (U/B Model).

Recent blood lead level studies sponsored by the Agency for Toxic Substances Disease Registry (ATSDR) at Superfund sites have included an examination of the relationship between soil lead/blood lead levels and soil lead/indoor dust lead levels. A recent example is the significant correlation between indoor floor dust lead and outdoor dust/soil lead levels reported in the Leadville Metals Exposure Study conducted by the Colorado Department of Health and ATSDR.

The ratio used in the U/B Model is an average value: the contribution of soil lead to house dust lead may well be greater in older, drafty homes, homes which use natural ventilation rather than air conditioning in summer, and homes which have increased transport of outdoor soil/dust into the home due to children and pets. These are just the conditions which exist in the Granite City Superfund site area. Thus to deny outdoor soil/dust lead as a major source of indoor lead is frivolous and misleading, as is the consideration of indoor dust lead loading from operating smelters, milling/mining sites and inner-city structures with deteriorating paint. These latter scenarios are known to give different soil lead/blood lead and soil lead/house dust lead correlations. TRC quotes Steel et al. data from mining communities its their discussion, although the differences in indoor dust loading between mining/milling sites and smelter sites is well accepted.

TRC chose to focus on house dust when considering the report of the Ontario Lead in Soil Committee (1987, doc 105). They, in fact, ignore the concluding recommendations of the committee: "a 1000 ppm guideline level is appropriate for areas to which children do not have routine access, while a guideline level between 500 and 1000 ppm is appropriate for areas to which children do have routine access". The report also includes the recommendations of the Royal Society of Canada: "for clean-up around lead-processing or lead-using plants, soil lead levels of <u>up to 500 ppm</u> are acceptable for residential areas and for

gardens and allotments, while levels of up to 1000 ppm should be acceptable for ....areas to which children have only intermittent access."

The misleading nature of TRC's presentation is further shown in their use of the above report. They cite the conclusion that "remediation of house dust lead is more important than remediation of soil lead" without further explaining the importance of the contribution of the sources of lead to the remediation or that blood lead measurements represent a snapshot in time. The temporal component is very important when examining the results of blood lead level measurements. It would be expected that when the primary source of lead dust is outdoor soil, blood lead measurements taken before the house dust lead/soil lead levels had reequilibrated would appear to indicate that remediation of house dust alone could solve the elevated blood lead problem. Unfortunately, this is not the case, and blood lead levels will rise again as house dust levels increase unless a permanent remedy, such as removal of lead contaminated soil, is undertaken.

U.S. EPA, Region V, chose not to rely on the U/B Model as the basis for recommending a 500 ppm cleanup standard when the proposed plan for the site was released because of the Model's evolving nature as a risk assessment tool. However, when public comments requested that the U/B Model be evaluated in the selection of a remedy, Region V employed the use of the U/B Model (version 2.0, the only version available at the time of the ROD)

to further evaluate the lead soil cleanup level proposed for this site. The U/B Model is primarily a risk assessment tool used to determine lead exposure and predict a distribution of blood lead levels in those exposed. When used to determine risk -- the age range of the critical exposed population, the cut-point and allowable percentage of children over the cut-point must be stipulated. U.S. EPA, Region V did not stipulate or endorse values in the application in question.

Instead, EPA used the values recommended in the comments submitted by NL Industries. Using these values, EPA demonstrated that if the U/B Model alone was relied on to determine a cleanup level for lead, approximately 8.5 percent of the exposed children under the age of six were predicted to attain blood lead levels greater than 15 micrograms per decaliter (15 ug/dl) and a more stringent cleanup standard than EPA recommended would be mandated.

Johnson Controls, in August 1990, submitted untimely comments asking EPA to again consider the use of the U/B Model. These comments were followed in the December 1990 comments Johnson Controls submitted pursuant to the Order, which also contains an extended discussion on the application of the U/B Model. U.S. EPA has rerun the current version of the U/B Model (version 4.0) using currently acceptable toxicological parameters (Exhibit A); the data is included in this presentation. It can be seen that with a 500 ppm soil cleanup level in Granite City, the current version of the model indicates that greater than 5%

of the children will still exceed an acceptable blood lead level of 10 ug/dl. The 10 ug/dl cut-point was previously discussed in EPA's letter to representatives of Johnson Controls dated September 14, 1990.

U.S. EPA has also evaluated the use of the U/B Model based on different guidelines currently being discussed at EPA Headquarters; the 500 ppm cleanup standard is the least stringent acceptable cleanup standard under these guidelines. A closer look at EPA's risk assessment approach used for other chemicals at Superfund sites reveals that allowing 5% of the population to suffer from lead poisoning may not be acceptable and clearly is not consistent with the 10^{-6} risk approach generally employed by the Agency. Region V anticipates formal guidance on the use of the U/B Model which adopts an approach to the assessment of risk at lead sites which is consistent with the risk assessment approach for other chemicals at Superfund sites. Official Superfund guidance may soon stipulate that 99.5% of the exposed children in lead-contaminated Superfund sites must maintain blood-lead levels below 15 ug/dl rather than requiring 95% of the children to measure less than 10 ug/dl. This curve is also included as Exhibit B. Under either scenario at the NL/Taracorp Superfund Site, however, the 500 ppm lead cleanup level selected for the Site is appropriate and the maximum allowable level to prevent undesirable health effects in the children living in this area.

U.S. EPA disagrees that the prediction of children's blood lead levels for Granite City need to be verified by a complete blood lead/environmental lead study. It is not U.S. EPA's intent nor is it practical to validate the U/B Model at every Superfund site. The purpose of the model is to eliminate the need for biological screening at every site. EPA does believe that blood lead studies are a desirable and needed tool to identify children who may need medical and/or follow-up intervention in areas where severe lead poisoning is common. It is emphasized that biological monitoring is not required for other chemicals of concern at Superfund sites and that the approach advocated by Johnson Controls is inconsistent with EPA policy. Most Superfund sites do not offer the possibility to obtain unbiased, statistically significant measurements of blood lead levels. One of the main reasons for doing biological monitoring is to determine the range of blood lead levels in the childhood population. The geometric standard deviation (GSD) used to calculate the blood lead distribution in the U/B Model (1.42) has been found to be too low in many cases, thus causing the blood lead predictions to be too low.

It should be further noted that a blood lead study was done by the Illinois Department of Public Health (IDPH) in Granite City in 1982. Blood lead levels for 35 children between the ages of 1 and 7 were reported: Twenty of the 35 children (20/35) (57%) had PbB levels $\geq$ 10 ug/dl; 10/35 (29%) were $\geq$ 15 ug/dl and 3/35 (8.6%) were > 25 ug/dl. Comments on Exhibit B, page 19 of

the comments submitted by Johnson Controls would tend to indicate that these blood lead levels are not of concern. As discussed above, EPA disagrees with this assertion. TRC also fails to recognize that deposited smelter dust could represent a threat forever until removed.

It is the best professional judgement of U.S. EPA, Region V, based on available literature and site specific information, that a soil clean-up level of 500 ppm is the maximum acceptable level for the residential NL/Taracorp Superfund site. The approach taken by TRC appears to be to criticize and invalidate virtually every study conducted by experts which may be utilized in determining an acceptable soil-lead level. As TRC points out in its extensive criticism of the bulk of the lead literature--it is difficult to do a perfect study. EPA, however, questions the usefulness of the TRC approach of criticizing virtually every study that has been conducted and also questions the qualifications of the individuals who prepared the comments for Johnson Controls. Johnson Controls does not list the authors' credentials in its comments. EPA has conducted a literature search and was unable to document any previous articles on lead remediation by the authors, who apparently are being relied upon as experts who can credibly attack the validity of existing lead studies. TRC's assertions that only pure matched data should be examined to look at the relationship between environmental lead and blood lead is inconsistent with the approach taken by EPA and most researchers. EPA, in reaching a cleanup decision, examined

a variety of documents which presented different viewpoints. The TRC approach indicates a result oriented bias which is evident in TRC's willingness to dispose of data which does not suit its conclusions and support its conclusions.[2]

An additional topic discussed at the December 21 meeting and presented in comments submitted pursuant to the order was the suggestion that EPA consider an alternate remedy at the site. NL Industries, Johnson Controls, and a number of other order recipients stated a preference for tilling contaminated soil at the site rather than excavating the soil and replacing it with clean soil.

NL Industries was represented by Mr. Steven Tasher. Mr. Tasher stated his belief that tilling should be considered as a remedy. However, Mr. Tasher was unable to explain why NL did not consider tilling while conducting the feasibility study for the Site. NL was also represented at the December 21 meeting by a paid technical consultant from Environ. The consultant,

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[2] TRC's apparent willingness to mold its arguments to a desired conclusion also appears in other portions of its presentation. For example, TRC states that "lead in soil is, at most, a weak contributor to children's blood lead. "TRC Investigation, December 1990, p.iii. However, TRC also states that ". . . soil and house dust are far and away the dominant influence on children's blood concentrations . . ." and that "soil and house dust were the overwhelming influences on children's blood lead levels" at four smelter sites TRC previously studied. "Adjustments in the lead uptake/Biokinetic Model to predict blood lead levels for children at Granite City," TRC Environmental Consultants, Inc., August 30, 1990, Tab 3, p.iii and p.23. TRC's statements emphasizing the contribution of soil lead to blood lead appear in a document which examines air-lead regulations and concludes that air regulations should not be made more stringent; TRC's statements minimizing the contribution of soil lead to blood lead appear in a document advocating a less stringent soil lead cleanup standard.

however, admitted having no previous experience with tilling remedies and was unable to provide any studies evaluating the effectiveness of tilling as a remedy.

Johnson Controls stated its support of tilling as a remedy and its belief that EPA has mischaracterized tilling as dilution. Regional employees of EPA as well as members of EPA's Environmental Criteria and Assessment Office have reviewed Johnson Controls comments and unanimously agree that tilling is clearly a dilution remedy increasing the volume of contaminated soil.

Only one set of data exploring the results of a tilling project was provided to EPA. The data, provided by Exide and referenced by Johnson Controls, appears to demonstrate that tilling, to some degree, diluted the concentration of lead in the surface soils of industrial property owned by Exide in Alabama. No data were presented indicating the effectiveness of tilling at the Alabama Site in reducing the threat of the contaminants to human health and the environment or the type of soils to which such a technique might be applicable. The documents submitted by Exide indicate that the Alabama project was a private project of Exide's. The State of Alabama made clear in its correspondence with Exide that it was not sanctioning tilling as a remedy sufficient to avoid potential Superfund liability. It is noteworthy that the Alabama project was conducted on industrial property and not residential property.

AT&T submitted comments which also recommend tilling as a potential remedy. Two sources were stated in the comments in support of tilling. First, AT&T states that tilling is the subject of a three year study financed by U.S. EPA in Baltimore Maryland. Mr. Barry Chambers, Program Administrator, Toxics Operations, Maryland Department of the Environment, was contacted to confirm this information. Mr. Chambers stated that he was contacted by a representative of one of the Respondents in this matter and informed that individual that tilling was considered for review in the Baltimore study, but it was concluded that a study of tilling was not worthwhile. Members of the Baltimore project determined that the excavation of lead contaminated soil would be more beneficial than tilling the soil. The decision was reached when it was agreed the excavation of contaminated soil and its replacement with clean soil was more health effective than a tilling remedy. Mr. Chambers also stated that the economic benefits of tilling the soil were suspect. Hard-packed urban soil, according to Mr. Chambers, does not readily lend itself to tilling. Excavation, combined with the replacement of contaminated soil with clean soil, also results in significantly lower levels of lead at the soil surface than reductions which may or may not be achieved by a tilling remedy. TRC did not contact either of the other two cities involved in this soil remediation study -- Boston and Cincinnati.

Boston has reported trying rototilling on residential properties in their study area with poor results due to equipment

failure. The type of equipment needed in residential areas broke down 3-4 times, with the blade breaking in one instance. Their conclusion was that rototilling was not cost effective in residential areas - which are highly compacted and often offer limited areas for access. Hand work was less labor and cost intensive.

Cincinnati reported rototilling one vacant property that met the protocol criteria for tilling. Soil lead levels were reduced to an average level horizontally, but did not yield a reduction by mixing with deeper soils due to the inability to achieve complete mixing through tilling; the property was subsequently excavated. Cincinnati suggests that tilling, removal of soil, mixing in a mixer and respreading of completely mixed soil may offer some alternative to disposal, but this approach is likely to be more costly. (Personal communication with N. Zaremba, Lead Free Kids, Boston; S. Clark, University of Cincinnati; Cincinnati; attendance at the January 22-23, 1991 meeting of the Urban Soil Lead Abatement Demonstration Projects Meeting, Baltimore, MD)

The second item used by AT&T to support its position that tilling is an appropriate remedy is an article by Dr. Robert Elias of U.S. EPA's Office of Research and Development. AT&T states that Dr. Elias is a proponent of tilling. An examination of the article submitted by AT&T, however, reveals that Dr. Elias merely considers tilling conceptually as one method that may be used to reduce concentrations of lead in soil. Dr. Elias

confirmed this interpretation of the article in question in a meeting held January 9, 1991. Dr. Elias stated that he is not a proponent of using tilling as a method of remediating lead contaminated soils in residential soils at Superfund Sites, but merely prepared an article which stated conceptually the various methodologies which could be considered in remediating contaminated soils.

Federal Cartridge submitted documents obtained from the State of Minnesota as the basis for its support of a tilling remedy. The documents state that Minnesota has proposed rules requiring homeowners to dilute lead contaminated soils by tilling the soils. The proposed rules, however, add no evidence to support the applicability or effectiveness of tilling as a means of remediating contaminated soils.[3] The rules proposed by the State of Minnesota are also proposed in a very different context than a Superfund cleanup. Minnesota's proposal places the burden on homeowners to clean the soil and does not address the issue of cleaning soils derived from a known point source of the contamination. CERCLA places the responsibility for cleaning contaminated property with the parties CERCLA defines as responsible for creating the contamination.

Despite any evidence submitted by the Respondents which could provide a sound basis for U.S. EPA to support a pilot study

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[3] The proposed rules cite the apparent support of tilling as a remedy by Mr. Joseph Dufficy of U.S. EPA. Mr. Dufficy was unaware that he was cited in the proposed rules and stated that he does not endorse tilling as a remedy.

of tilling at the Site, the number of commenters raising the issue of tilling prompted regional personnel to further investigate the appropriateness of this remedy. Members of Region V attended a national seminar on the cleanup of lead contaminated residential soils which was held on January 8-9, 1991. The seminar was attended by approximately one hundred individuals working on lead cleanup sites around the country. Attendees included representatives of the U.S. EPA Regions and Headquarters, the U.S. EPA Office of Research and Development, the U.S. EPA Office of Environmental Criteria and Assessment, various states, and others. The entire group was asked whether they had experience or comments on tilling as a form of remediation for lead contaminated soils. Every response to the question stated that the dilution of lead in residential soils through tilling is not a recommended form of remediation. Not a single commenter was aware of the use of tilling to remediate residential soil-lead contamination and no one was willing to endorse tilling as a remedy. Region V also obtained a recent survey of all Records of Decisions which states that no site has adopted this dilution remedy to remediate lead contaminated soils.

The comments received on tilling ignore certain inherent flaws in the use of tilling as a remedy when compared with the excavation of contaminated soils and the replacement of the contaminated soil with clean soil. First, a cleanup as established in the ROD results in <u>clean</u> soils at the surface

rather than soils diluted to somewhere under 500 ppm of lead. Clean soils reduce the exposure levels to the population and excavation removes the contaminated soils from areas of public access. The contaminated soils will be isolated in an area covered with a RCRA compliant cap and a bottom liner. Second, a tilling remedy will result in an increased volume of contaminated soil. One of the nine criteria for evaluating remedial alternatives established by the CERCLA National Contingency Plan (NCP) is "reduction of toxicity, mobility, or volume." Tilling increases the volume (excavation does not) and does not reduce the mobility of lead (the selected remedy reduces airborne mobility by placing contaminated soil under a RCRA cap and backfilling excavated areas with clean soil). If lime is added to tilled soil, it may reduce mobility of lead in the soil; however, this practice is of questionable utility in residential areas and has not been shown to be permanent. Third, the possibility exists that future information concerning the toxicity of lead will require further remediation at the Site. The tilling remedy, by increasing the volume of contaminated soil, may increase the cost of future remediation and be more disruptive to the community. An excavation remedy is anticipated to eliminate the need to return to areas once they are remediated, since the soil used to replace the contaminated soil will already be clean. Fourth, tilling does not remove soils from areas where children have unrestricted access. Even with sod placed over lead contaminated soil diluted by tilling,

observations in the Granite City area indicate that bare patches of soil are not uncommon. Exposed soil, even after tilling, will place children and other individuals at risk. An excavation remedy removes the contamination from areas where children and others will have access.

Based on written comments received and statements made by Respondents at the December 21, 1990 meeting and in subsequent discussions, it appears that there is a misconception regarding the 500 ppm residential lead soil cleanup level. The 500 ppm cleanup level was set by U.S. EPA based on excavation as the cleanup method followed by replacing removed soil with clean soil. Both of these requirements, 500 ppm and excavation, are explicitly stated in the ROD. It is incorrect for the Respondents to view the 500 ppm cleanup level as a standard to be achieved by any available remediation technique. The cleanup standard is 500 ppm, <u>using</u> excavation. In selecting the 500 ppm level, U.S. EPA assumed that clean backfill would be used following excavation to provide a clean surficial layer of soil with very low lead concentrations (approximately 25 ppm). Tilling will not achieve this, and the 500 ppm cleanup level was not selected with tilling in mind. The level would have certainly been significantly lower if tilling were selected as the cleanup method. The proposed use of tilling is clearly inconsistent with the letter and the intent of the ROD. It is also inconsistent with Illinois law, which will be discussed later in this response.

Comments received during the comment period largely ignore site specific factors which must be considered even if EPA was willing to consider an experiment with an untested remediation technique such as tilling. The NL/Taracorp Site in Granite City will require the removal of lead contaminated soil at a large number of residences. An experiment on the short and long term effectiveness of a tilling remedy is best conducted on industrial property or an area with no or minimal access to children. The area the Respondents propose for tilling, however, is a residential community with unrestricted access and a large number of people. Region V at this time does not consider such an area appropriate for experimenting with tilling as a remediation alternative at a Superfund Site.

Even if U.S. EPA was to consider the dilution of soil through tilling as a remedy, the tilling alternative proposed by Respondents is not a proper remedial alternative in the State of Illinois. Section 121(d)(2) of CERCLA, as amended, requires that remedial actions must at least attain Federal and more stringent State applicable or relevant and appropriate requirements (ARARs) upon completion of the remedial action. The Illinois Lead Poisoning Prevention Act, Ill. Rev. Stat. ch. 111 1/2, par. 1301 et seq., as implemented by the Illinois Administrative Code, Part 845, defines the permissible limits of lead in soil at section 845.50. The permissible limit for lead in soil which is readily accessible to children under age 16 is 200 micrograms of lead per gram of soil. Section 845.30 states that lead hazards must be

removed or permanently covered. The remedy selected by U.S. EPA and IEPA will remove the lead contamination greater than 500 ppm through excavation and cover remaining lead with clean soil. A tilling remedy neither removes the soil or permanently covers the soil. Tilling would leave the property owner out of compliance with the Illinois Lead Poisoning Prevention Act and, by increasing the volume of contaminated soil, will actually increase the burden on the property owner who attempts to comply with the Lead Poisoning Prevention Act. Representatives of the Illinois Department of Health have been consulted and agree with U.S. EPA's interpretation of the Lead Poisoning Prevention Act. U.S. EPA considers this act an ARAR that must be complied with in remediating the Granite City Site.

U.S. EPA has reviewed the comments received regarding the order and the selected response action. It is U.S. EPA's determination that the response actions the Respondents are ordered to comply with are necessary and appropriate actions under CERCLA to protect human health and the environment.

ADDED REFERENCES

CDH 1990, Leadville Metals Exposure Study, Colorado Department of Health, University of Colorado at Denver and Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services, 1990.

MPCA 1987, Soil Lead Report to the Minnesota State Legislature, A Statement by the Minnesota Pollution Control Agency and the Minnesota Department of Health, MN, 1987.

USEPA 1990a, Technical Support Document on Lead, ECAO-CIN-757, Environmental Criteria and Assessment Office, U.S. Environmental Protection Agency, Cincinnati, OH, 1990.

USEPA 1990b, Users Guide for Lead: A PC Software Application of the Uptake/Biokinetic Model Version 0.40, First Draft, Environmental Criteria and Assessment Office, U.S. Environmental Protection Agency, Cincinnati, OH, 1990.

USDHHS 1990, Toxicological Profile for Lead, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, 1990.

Review of Soil-Lead Records of Decision

Review of the selected remedy at the Marjol Site, Throop, Pennsylvania

Region X Contractor reports, November 16, 1990 and November 29, 1990.[4]

State of Ohio letters on soil lead cleanup levels.[5]

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[4] This document is not releasable at the present time, but may be available in the future.

[5] This document represents inter-agency correspondence not presently releasable.

ABSORPTION METHODOLOGY: Non-Linear Active-Passive

AIR CONCENTRATION: 0.260 ug Pb/m3

Indoor AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	7.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 ug Pb/L

WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: constant conc.

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	500.0	500.0
1-2	500.0	500.0
2-3	500.0	500.0
3-4	500.0	500.0
4-5	500.0	500.0
5-6	500.0	500.0
6-7	500.0	500.0

Additional Dust Sources: None DEFAULT

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

Maternal Blood Conc: 7.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	5.90	18.39	15.00
1-2:	5.67	19.04	14.99
2-3:	5.58	19.39	14.99
3-4:	5.65	19.50	14.98
4-5:	5.83	19.43	14.97
5-6:	5.84	19.74	14.96
6-7:	5.83	20.11	14.95

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.94	0.40	0.00	0.05
1-2:	2.96	1.00	0.00	0.09
2-3:	3.39	1.04	0.00	0.16
3-4:	3.28	1.06	0.00	0.17
4-5:	3.18	1.10	0.00	0.17
5-6:	3.37	1.16	0.00	0.24
6-7:	3.74	1.18	0.00	0.24

* Site-Specific or Target Values incorporated.

EXHIBIT A

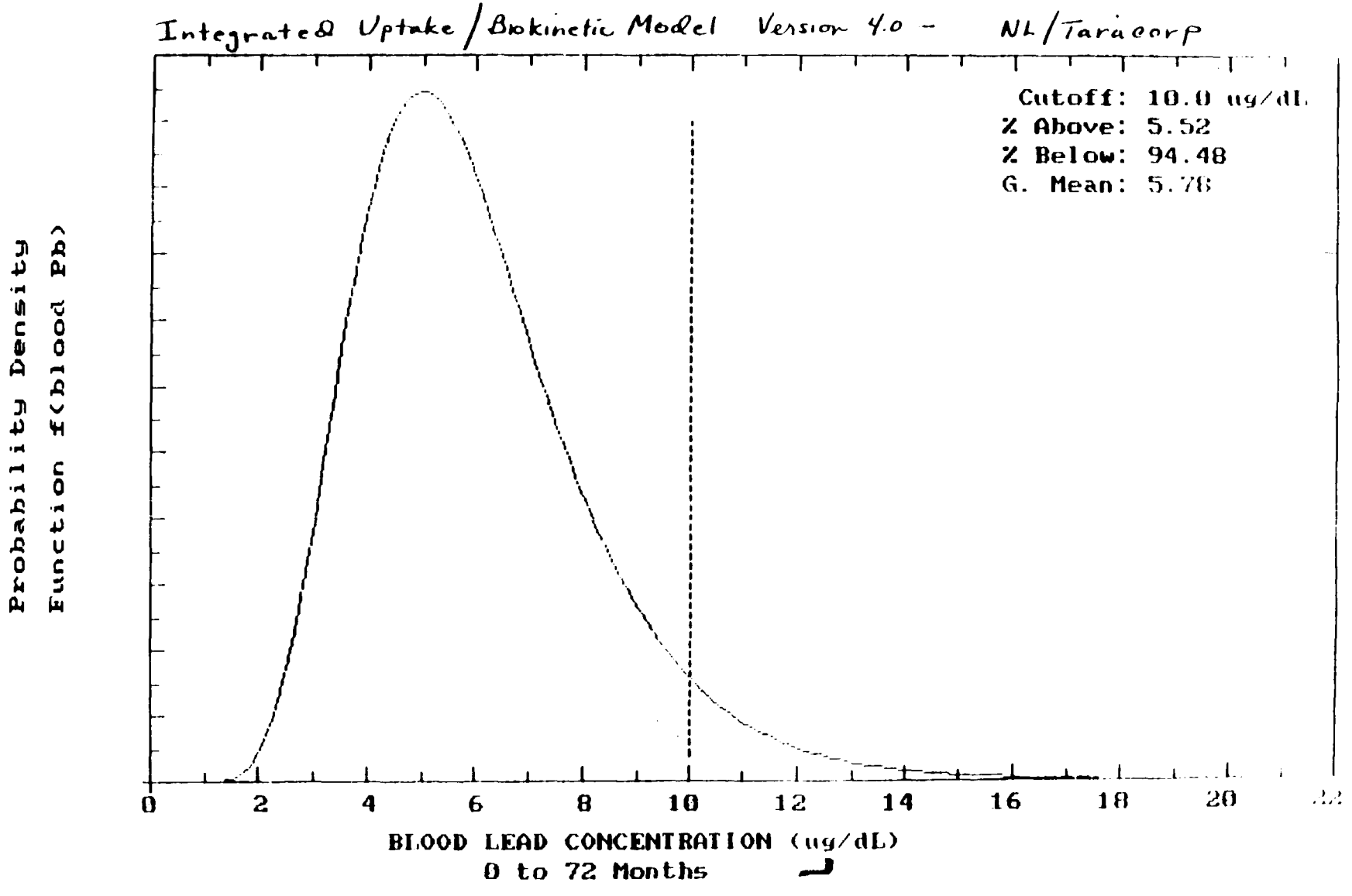
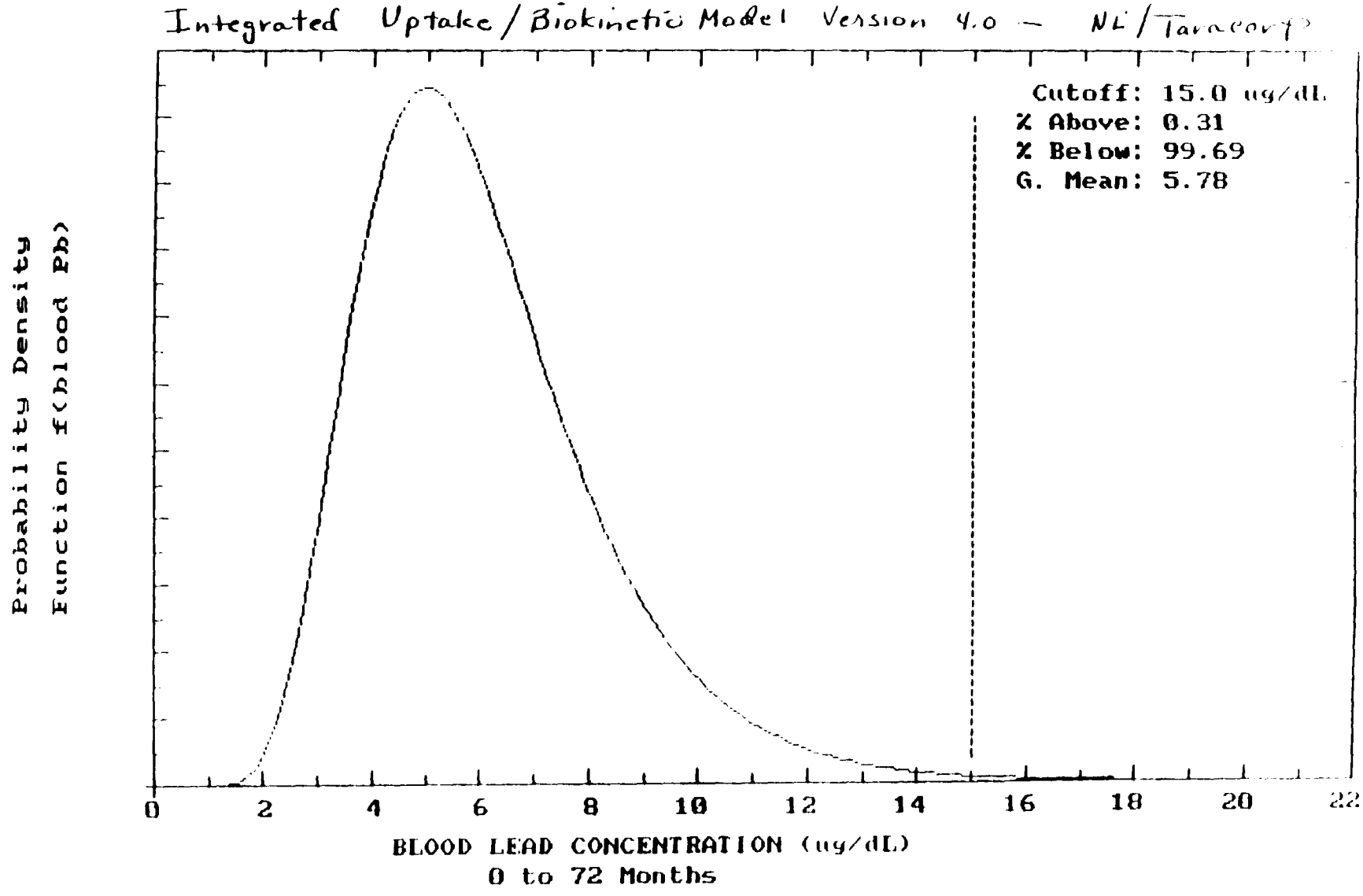

Integrated Uptake/Biokinetic Model Version 4.0 - NL/Taracorp
Cutoff: 10.0 ug/dL
% Above: 5.52
% Below: 94.48
G. Mean: 5.78
Probability Density
Function f(blood Pb)
0
2
4
6
8
10
12
14
16
18
20
22
BLOOD LEAD CONCENTRATION (ug/dL)
0 to 72 Months

Exhibit B


Integrated Uptake/Biokinetic Model Version 4.0 — NL/Tarascon
Cutoff: 15.0 ug/dL
% Above: 0.31
% Below: 99.69
G. Mean: 5.78
Probability Density
Function f(blood Pb)
0
2
4
6
8
10
12
14
16
18
20
22
BLOOD LEAD CONCENTRATION (ug/dL)
0 to 72 Months

PARAMETER VALUES:

ABSORPTION METHODOLOGY: Non-Linear Active-Passive

* AIR CONCENTRATION: 0.260 ug Pb/m3

Indoor AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 ug Pb/L

WATER Consumption: DEFAULT

* SOIL & DUST:

Soil: constant conc.

Dust: constant conc.

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	550.0	550.0
1-2	550.0	550.0
2-3	550.0	550.0
3-4	550.0	550.0
4-5	550.0	550.0
5-6	550.0	550.0
6-7	550.0	550.0

Additional Dust Sources: None DEFAULT

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

Maternal Blood Conc: 7.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	6.33	19.89	16.50
1-2:	6.11	20.54	16.49
2-3:	6.01	21.08	16.48
3-4:	6.08	20.99	16.47
4-5:	6.27	20.92	16.46
5-6:	6.28	21.22	16.45
6-7:	6.27	21.59	16.43

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.94	0.40	0.00	0.05
1-2:	2.96	1.00	0.00	0.09
2-3:	3.39	1.04	0.00	0.16
3-4:	3.28	1.06	0.00	0.17
4-5:	3.18	1.10	0.00	0.17
5-6:	3.37	1.16	0.00	0.24
6-7:	3.74	1.18	0.00	0.24

* Site-specific or Target Values Incorporated.

Exhibit A2

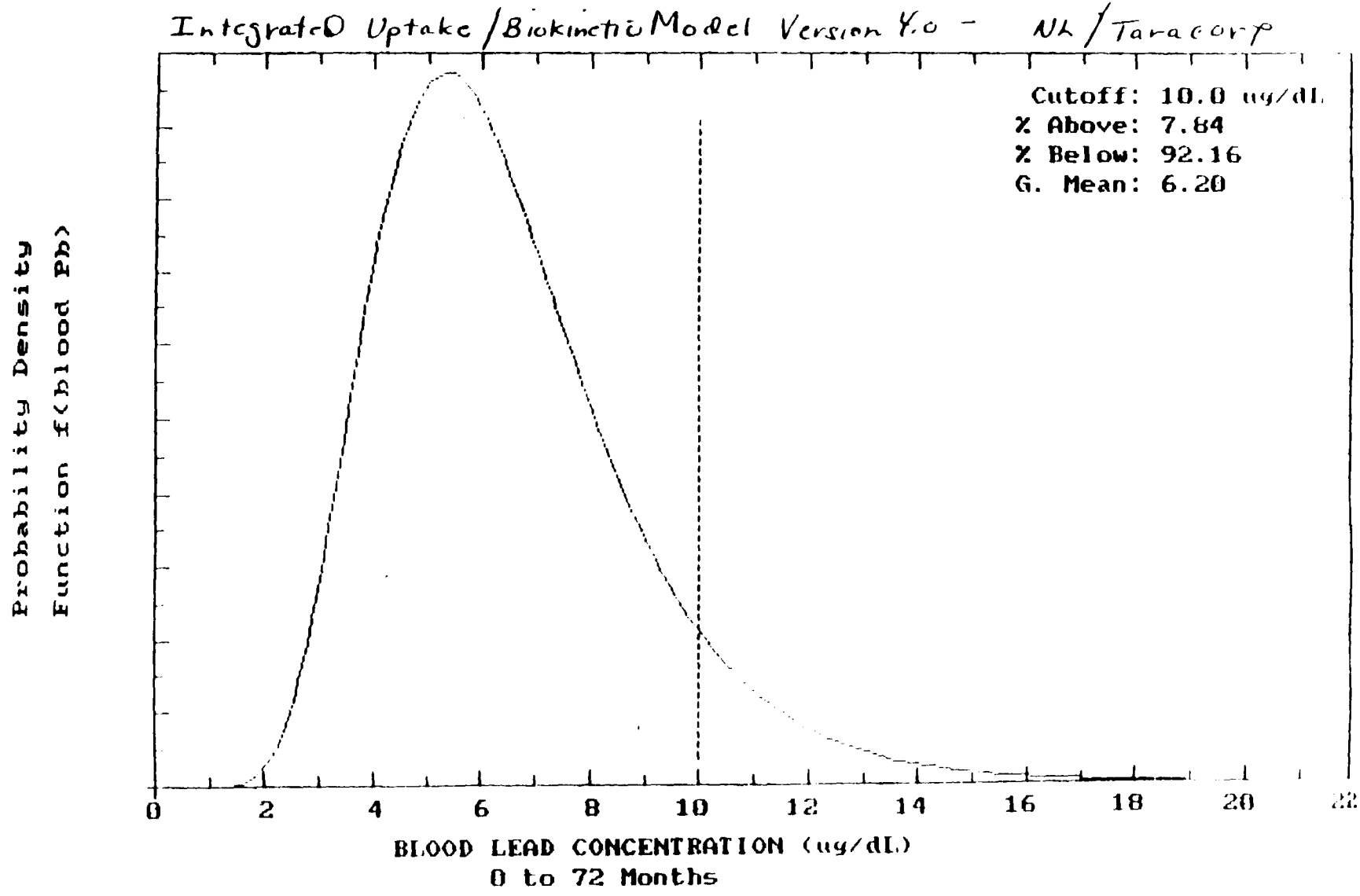
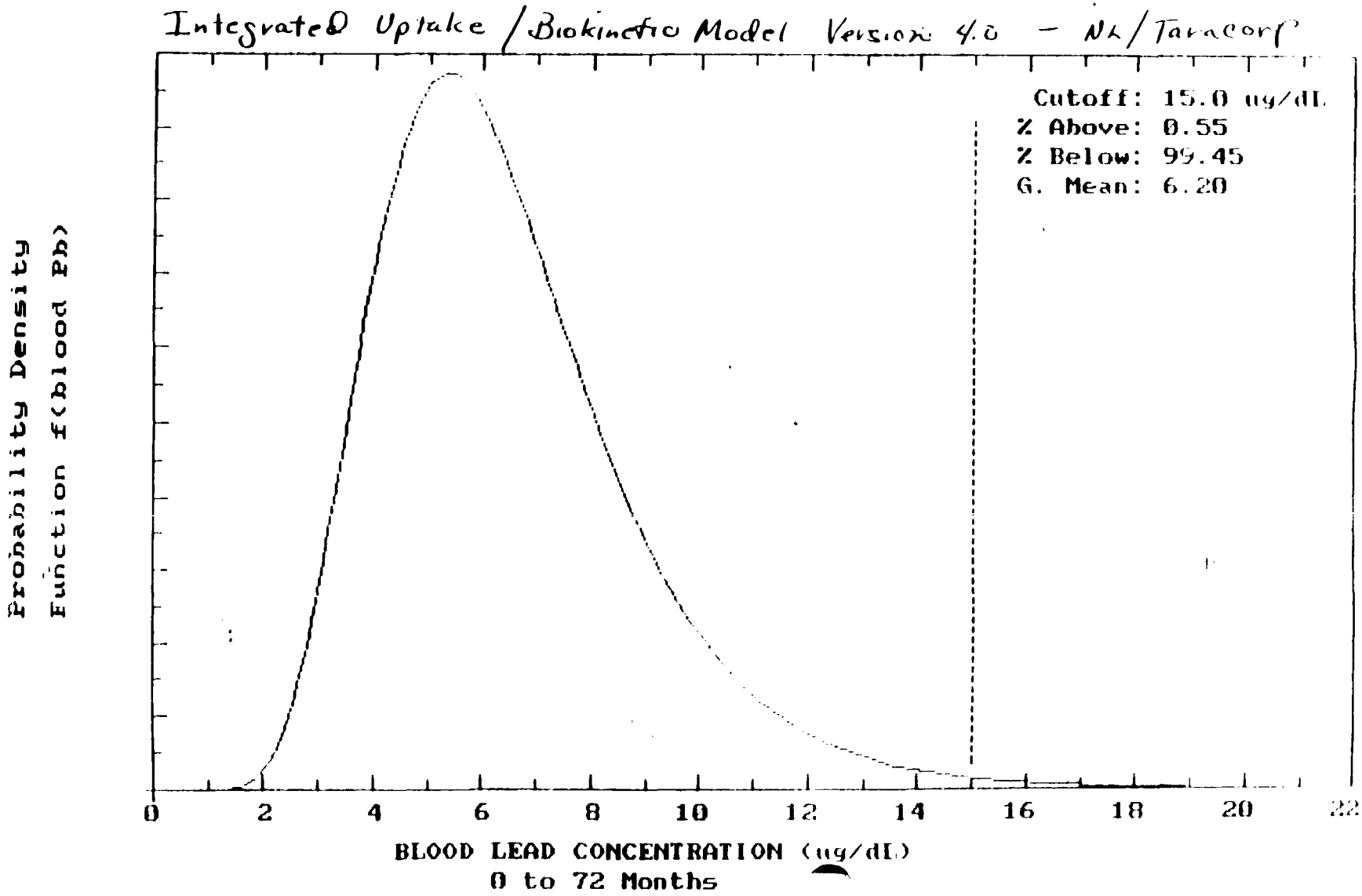

Integrated Uptake/Biokinetic Model Version 1.0 - NL/Tetracorp
Cutoff: 10.0 ug/dL
% Above: 7.84
% Below: 92.16
G. Mean: 6.20
Probability Density
Function f(blood Pb)
0
2
4
6
8
10
12
14
16
18
20
22
BLOOD LEAD CONCENTRATION (ug/dL)
0 to 72 Months

Exhibit B2


Integrated Uptake / Biokinetic Model Version 4.0 - NL/Tarascon
Cutoff: 15.0 ug/dL
% Above: 0.55
% Below: 99.45
G. Mean: 6.20
Probability Density
Function f(blood Pb)
0
2
4
6
8
10
12
14
16
18
20
22
BLOOD LEAD CONCENTRATION (ug/dL)
0 to 72 Months

Terry,

More news —

Please call

— Steve Siegel

(312) 353-1129

attachment a

University of Illinois
at Urbana-Champaign

National Animal Poison Control Center
College of Veterinary Medicine

1220 Veterinary Medicine Basic Sciences Building
2001 South Lincoln Avenue
Urbana, IL 61801

800 548-2423 poison
217 333-2033 administrative
217 333-4628 fax

April 16, 1991

TO: Shirley Baer, IEPA
Terry Ayers, IEPA
Tom Long, IDPH
Ted Valli, Dean, College of Vet. Med.
Richard Bevill, Acting Head, Dept. Vet. Biosciences
Terry Rathgeber, Development Officer
Joe DiPietro, Acting Assoc. Dean, Research
David Schaeffer
Marie Côté
Phillippe Berny

FROM: Bill Buck, Director of Toxicology WBB
National Animal Poison Control Center
College of Veterinary Medicine, UI

SUBJECT: Meeting with Industry Representatives, NL/Taracorp

This is to confirm the meeting scheduled for April 18, 1991 at 11:00 am, Room 3526, College of Veterinary Medicine Basic Sciences Building located at 2001 S. Lincoln, Urbana, IL. Lunch will be brought in for your convenience.

We expect about 10 individuals representing AT&T, General Motors, Ford Motor Company, Johnson Controls, and Environ consultants to attend this meeting. The discussions may include possible research studies that the industries involved with the NL/Taracorp site could support in collaboration with the University of Illinois, the IEPA and the IDPH.

We hope each of you can attend this meeting. If you need additional information, please call me at 217-333-2053.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION V
230 South Dearborn Street
CHICAGO IL 60604

EPA attachment B

FACSIMILE REQUEST AND COVER SHEET

PLEASE PRINT IN BLACK INK ONLY

TO
Terry Aires

OFFICE/PHONE
IEPA

MACHINE NR: 217 524 4193
VERIFICATION NR:

REGION/LAB

FROM
Steve Siegel

PHONE
8-353-1129

MAIL CODE
5CS-TUB-3

OFFICE
Regional Counsel - SWERB-1

DATE
4/17/91

NUMBER OF PAGES TO INCLUDE THIS COVER SHEET
19

Please number all pages

INFORMATION FOR SENDING FACSIMILE MESSAGES

EQUIPMENT	FACSIMILE NUMBER	VERIFICATION NUMBER
PANAFAX PX-100 (230 S. Dearborn)	FTS: 886-9096(auto) Comm: (312)886-9096	FTS: 886-3096 Comm: (312)886-3096
XEROX 400	FTS: 886-3096(manual) Comm: (312)886-3096	FTS: 886-3096 Comm: (312)886-3096

Terry talked to Siegel 4/17/91

OFFICE OF REGIONAL COUNSEL - 111 W. JACKSON BUILDING

3rd Floor: (SWERB-1)	FTS: Comm:	886-0747 (auto) (312) 886-0747
7th Floor:	FTS:	886-6160

4:02 pm Received 4-17-91

PAGE ___ OF ___ PAGES

EPA Form 5040-5 (Rev. 12-83) Replaces EPA Form 5040-5A and the previous edition of EPA Form 5040-5, which are obsolete.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

MAR 29 1991

REPLY TO ATTENTION OF:
5CS-TUB-3

Mr. Joe Nassif
Coburn, Croft & Putzell
One Mercantile Center-Suite 2900
St. Louis, Missouri 63101

Dear Mr. Nassif:

I am in receipt of your letter of March 8, 1991, which purports to document settlement discussions between various potentially responsible parties (PRPs) at the NL Industries/Taracorp Superfund Site in Granite City, Illinois (the Site or the NL Site) and the United States Environmental Protection Agency (EPA). The discussions you refer to were initiated by several parties responsible for the generation of hazardous substances at the NL Site. The generator PRPs requested a meeting with representatives of EPA on December 7, 1990, after each of the generators received a Unilateral Order from EPA to commence cleanup at the Site. The significant errors and omissions in your efforts to document these discussions warrants a response.

Before documenting the specific details of the settlement proposal, it is necessary to place the proposal made by the various generators at the Site in the proper context, as your letter fails to reference the circumstances of our discussions. Each generator of hazardous waste represented in your sub-group of responsible parties at the Site received a general notice letter from EPA in November 1989, notifying them of their potential liability at the Site. Each generator was also invited to a meeting to discuss the Site in December 1989. The December 1989 meeting, among other things, provided a history of the Site and discussed the remedial alternatives under consideration. The alternatives were developed by NL Industries, a responsible party at the Site who signed an administrative order by consent to conduct the remedial investigation and feasibility study (RI/FS) at the Site. Copies of technical documents regarding the Site were immediately made available to the group of generator respondents who identified Mr. Dennis Reis, legal counsel for Johnson Controls, as their contact person. The generator respondents who approached EPA on December 7, 1990, were members of this group. The December 1989 meeting also announced the anticipated schedule for future Site events, including the

January release of EPA's proposed plan, the opening of the public comment period in January, and the expectation that a final decision on the remedy for the Site would be made in March 1990.

On March 30, 1990, after careful consideration of all documents relating to the Site, evaluation of literature relevant to the cleanup, EPA guidance, and a thorough examination of various ideas suggested in the public comment period, EPA selected a remedy for the Site.

On June 25, 1990, EPA issued Section 122(e) special notice letters to the various PRPs. Section 122(e) of CERCLA, 42 U.S.C. § 9622(e) sets forth certain negotiation procedures that may be followed by the Agency. The special notice letter triggers a 60-day moratorium on certain EPA response activities at the Site. During this 60-day period, the parties represented in your March 8 letter, among others, were invited to participate in formal negotiations with EPA. This 60-day period is extended an additional 60 days if EPA receives a good faith offer from the PRPs attempting to negotiate a settlement with the EPA. A good faith offer is a written proposal that demonstrates the PRPs' qualifications and willingness to conduct or finance the design, implementation, and monitoring of the remedy selected in EPA's Record of Decision (ROD). A good faith offer must not be significantly different from the ROD.

The generator respondents represented in your letter chose not to take advantage of the negotiation period prescribed in CERCLA. The members of your group failed to submit a good faith offer by August 31, 1991, the end of the 60-day moratorium. The generator respondents were formally notified of their failure on September 14, 1990, in a letter from Norman R. Niedergang to Mr. Dennis Reis, the individual identified as the contact person for your group.

Section 122 negotiation procedures are designed, in part, to allow Potentially Responsible Parties (PRPs) the opportunity to implement the selected remedy at a site without unduly delaying CERCLA cleanups. Settlement proposals received after the negotiation period are not favored. In light of the PRPs failure to take advantage of Section 122 and enter into meaningful negotiations with EPA, a unilateral administrative order was issued by EPA on November 27, 1990, pursuant to Section 106 of CERCLA.

After these events, the group of generator PRPs you represent approached EPA about the possibility of entering into meaningful settlement discussions for the first time. Although EPA was under no obligation to entertain a new proposal at such a late date, a meeting was arranged for December 7, 1990. The generator respondents represented at this meeting, apparently recognizing the untimeliness of proposals they wished to make, attempted as

an initial matter to offer justifications for their failure to provide a good faith offer to EPA during the statutorily mandated negotiation period.

Mr. Nassif, you and various other representatives of this subgroup of generators have repeatedly portrayed your clients as the victims of an uncooperative group of PRPs at the Site. You have stated that certain parties, including Johnson Controls (represented by Mr. Reis) are determined to litigate this case. Representatives of AT&T and General Motors, in particular, have informed me that there are ongoing disagreements between NL Industries and Johnson Controls at other Superfund sites which prevent them from entering into meaningful negotiations with EPA regarding the NL Site in Granite City. You have also recognized that the various lead contaminated cleanup sites NL Industries and Johnson Controls are identified with around the country gives them a mutual interest in fighting any remedy which sufficiently addresses the significant health risks associated with lead contamination at the Granite City Site. Various representatives of the generators in your group have expressed their frustration that NL Industries and Johnson Controls refuse to recognize the strength of the record EPA compiled before reaching its decision on a remedy for the NL Site in Granite City. Nevertheless, these same parties initially chose to join a group led by Johnson Controls.

AT&T, General Motors, and the other parties represented in your March 8 letter made a deliberate tactical decision during the formal negotiation period to join a PRP committee with objectives you have considered unrealistic. This group failed to recognize the imminent and substantial endangerment to the public created by Site operations. AT&T and the other generators of hazardous waste apparently calculated the significant financial benefit they would receive if the initial PRP group's position prevailed. Only after the negotiating posture taken by this group failed did AT&T, GM, and others step forward to discredit the group they initially supported and offer a new alternative.

In light of the PRP Committee's total failure to make a good faith offer to EPA during the negotiation process, EPA entered the December 7, 1990, meeting requested by the generator respondents willing to listen to your ideas and proposals, but unwilling to enter into protracted negotiations. This was stated to representatives of your group before there was an agreement to meet on December 7, 1990. The inaccuracies in your description of events between December 7, 1990, when the generators first made their proposal and February 21, 1990, when you called me to withdraw the generator offer from EPA consideration are too numerous to respond to in a meaningful manner. The remainder of this letter will document our discussions and highlight a few of the significant inaccuracies in your reporting.

On December 7, 1990, EPA was tentatively presented with a proposal from a group of generator respondents to resolve their liability at the NL Site. The proposal contained the following major points:

1. The generators would perform up to 35% of the Work required at the Site;

2. The generators' tasks should be performed early in the project so the generators could resolve their liability without waiting for the entire cleanup to be complete;

3. EPA must allow the generators to conduct an investigation into a remedial alternative (tilling) not considered in the PRP-lead remedial investigation and feasibility study; and

4. The possibility was raised by your group of a sliding-scale which would allow generator respondents to resolve their liability at greater than a 65% reduction in their liability if certain respondents remained uncooperative.

Each of the above elements was confirmed in a letter from Daniel Bicknell of General Motors on December 13, 1990.

In a letter dated December 24, 1990, I provided Mr. Bicknell with a formal response to the issues discussed at the December 7 meeting and in Mr. Bicknell's letter of December 13. Although the generators' proposal requested EPA to reduce the legal liability of almost every responsible party at the Site other than NL Industries, the Site owner, by 65% (the reduction in liability is actually significantly more than 65% when it is considered that the settling generator respondents could then allocate their already greatly reduced share of liability among themselves), I agreed to present this offer to EPA and the U.S. Department of Justice ("DOJ") management provided there was agreement on certain provisions by the generators requesting this settlement. First, the work done by the generators must be consistent with the remedy selected for the Site by EPA (eliminating the possibility of tilling) and second, the United States receive certain assurances that in reducing the legal obligations of the generator respondents by 65%, a viable responsible party would remain to complete the cleanup of the Site. In agreeing to recommend to EPA and DOJ that the United States accept a 65% reduction in the liability of the generator respondents at this Site, your group was presented with an opportunity to obtain the settlement it requested without needless posturing by either side or protracted negotiations.

AT&T and the other members of the generator group chose to respond to the December 24, 1990 letter by continuing to insist

on various changes to the remedy. The generator respondents, hesitant to concede these points, insisted on making additional demands to the United States as late as the week of February 18, 1990.

The first change the generator respondents initially requested was tilling as an alternative remedy. This alternative was not considered in the PRP lead RI/FS for the Site, has been rejected by other EPA Regions as so lacking in merit that it is not even worthy of consideration as an RI/FS alternative, and received no significant documentation of its effectiveness in any cleanup even remotely similar to the situation in Granite City, Illinois. This alternative was not recommended by any PRP during the public comment period at the Site or for months after public comment, yet has been known by Exide and possibly other major generators as a methodology since at least 1988. It is also noteworthy that AT&T, in its attempts to promote tilling, went so far in its comments on the administrative order for the NL Site as to badly mischaracterize the statements of researchers and scientists studying lead remediation. When various parties, including Mr. Barry Chalmers of the Maryland Department of the Environment and Dr. Robert Elias of U.S. EPA's Environmental Criteria and Assessment Office, were contacted to confirm the various representations made in AT&T's comments, they contested the validity of the characterizations made. Mr. Chalmers stated that he was contacted by a member of the generator respondents' committee and told that individual that the researchers in the Baltimore study determined that tilling was not an effective means of remediation. On two occasions Dr. Elias, in personal communications, has stated that the use of tilling as a remedy has proven unsuccessful. A more detailed response on the use of tilling as a methodology is found in EPA's January 1991, response to comments received on the administrative order.

Despite numerous discussions regarding the ineffectiveness of diluting lead contaminated soil (tilling), the members of your generator group chose to withdraw their offer to perform 35% of the Work at the Site. In place of a constructive discussion on a workable settlement, your group joined with NL Industries and Johnson Controls to present EPA with a global settlement offer. The offer was predicated on EPA allowing the PRPs to perform a tilling pilot project which would be considered for remediation of the remainder of the Site. This offer was prepared by Mr. David Butterworth and received by EPA in a correspondence dated January 17, 1991, the day before the effective date of the administrative order. A formal denial of this offer, predicated on unacceptable terms, was sent to the parties on February 1, 1991.

Your March 8, 1991, letter states that in return for a concession to drop tilling from the negotiations, EPA indicated it would consider a "sliding scale" approach requiring the United States

to release the generator respondents of greater than 65% of their liability, depending on the number of generator respondents participating in the settlement. The February 19, 1991 correspondence of General Motors technical representative, Mr. Dan Bicknell, to Mr. Brad Bradley of EPA presents the opinion you have often stated that in agreeing to a settlement where the United States will compromise its claims to 65% of the generator respondents' liability, settling respondents will still bear more than three times their fair share of cleanup costs.

A sliding scale approach requiring greater than a 65% compromise of the Government's claim has never been considered. This position is documented in my December 24, 1990, response to Mr. Bicknell's December 13, 1990, letter.

There is absolutely no legal basis for the claims of Mr. Bicknell, yourself, and the various other representatives who have advocated the position that the willingness of EPA to even consider a reduction in liability of 65% (let alone more than this amount) is anything other than a tremendous compromise by the United States. Courts have uniformly recognized that CERCLA's "primary purpose 'is the prompt cleanup of hazardous waste sites.' J.V. Peters & Co., Inc. v. Administrator, 767 F.2d 263, 264 (6th Cir. 1985). The Agency's agreement to enter into a settlement in this case which compromises 65% of the government's claim against virtually every defendant except NL Industries was far from certain. Even as late as February 21, 1991, I was willing to pursue this matter with EPA management. However, the generator's expectations of an even greater compromise are clearly unrealistic. Section 107 of CERCLA, 42 U.S.C. § 9607, provides the opportunity for settling parties who believe they have paid, as Mr. Bicknell calls it, more than their "fair share," to seek contribution from non-settling parties for necessary costs of response that are incurred consistent with the National Contingency Plan. EPA's role in the process is to enforce CERCLA to assure that the statute's primary goal, the cleanup of hazardous waste sites, is obtained. The Courts, not EPA, are the proper forum to help those in need of assistance in determining the appropriate allocation between parties in a CERCLA settlement.

Finally, regarding the soil-lead cleanup of residential areas at the Site, let me say that throughout our discussions it was understood by representatives of EPA and the Department of Justice that the cleanup of lead contaminated residential soil was an essential part of the generator respondents' offer. This understanding was confirmed in writing in Mr. Dan Bicknell's letter of December 13, 1990, when Mr. Bicknell stated that "the generators are offering to do work in the areas of highest soil-lead, thereby immediately reducing any potential unacceptable risks to the public health ---" (December 13, 1990 letter, page 2). The generator respondents' stated intent to clean

the selection of a remedy at the Site or non-compliance with the unilateral order issued to the parties, these documents will not be added to the formal administrative record for the Site.

Sincerely,

Steven Siegel
Assistant Regional Counsel

attachment C

Name	With: #	Phone #
Wm. Buck	UI	217-333-205
Terry Ayers	Ill. EPA	217-782-6760
Shirley Baer	IEPA	217-782-6760
Judy McCarthy (Technical)	AT+T	908-204-8297
Joseph Nassif	Coburn Croft + Putzell	(314) 621-8575
Alan M. Schlesinger	AT&T	908-204-8430
Karen Wilcock	ENVIRON	703-516-2312
Janet D. Smith	NL Industries	(212) 421 7204
Dennis Reis	Sidley + Austin	(312) 853-2659
David Schaeffer	UI/Vet Biosciences	(217) 244-0154
John J. Hassett	UI/Agronomy-Soils	(217) 333-9472
[illegible] (Marie Côté)	UI/Vet Med	(217) 333-2053
Philippe J. Berny Graduate Student (France)	UI/Vet Biosciences	(217) 333-2053
Joe DiPietro	UI/Vet Med	217 333-6759
Terry Ratzlaff	UI/Vet Med	
Connie Sullinger	IEPA	217-785-0830
Catherine Copley	IL Dept. Public Health	(217) 782 5830
Steve Siegel	U.S. EPA	(312) 353-1129
[illegible]		
[illegible]	IEPA	217 782-9685
[illegible]	Coalition for [illegible]	
[illegible]	[illegible]	
T.E. Valli	UI/Vet Med	
Tom Long	IDPH	

(18)

University of Illinois
at Urbana-Champaign

National Animal Poison Control Center

1220 Veterinary Medicine
Basic Sciences Building
2001 South Lincoln Avenue
Urbana, IL 61801

College of Veterinary Medicine

800 548-2423 *hotline*
217 333-2053 *administrative*
217 333-4628 *fax*

PROPOSED AGENDA

11:00	Welcome ...	T. E. Valli, Dean College of Veterinary Medicine, UI
11:15	Introduction of Participants	
11:30	Introductory Statement from PRP (Potential Responsible Parties).....Dennis Reis, Johnson Controls	
12:00	Lunch	
12:30	Introductory Statement from University of Illinois, IEPA, and IDPH ..... W. B. Buck, S. Baer, T. Long	

1:00-4:00 Discussion